

CTSC 5640

Logistic Regression

Faculty: Stacy J. Winham, Ph.D.

Credits: 1

Quarter: Winter

Prerequisites: CTSC 5600 and 5610

Overview

Logistic regression is often used as an analytic tool for medical studies with binary endpoints. In this course, we will:

- Identify appropriate occasions to use logistic regression and describe how logistic regression may be used to estimate the magnitude of association for a predictor versus a binary outcome variable using an odds ratio.
- Interpret odds ratios for binary, categorical, and continuous predictor variables, describe how the odds ratio may be influenced by confounding variables and/or interactions among variables, and how logistic regression may be used to adjust for the presence of confounders and to test for the presence of interaction.
- Explore the assessment of statistical significance, model building, and model assessment strategies in the presence of several risk variables.
- Apply the use of logistic regression in score development and validation with the associated receiver-operator characteristic (ROC) curve.

Objectives

Upon successful completion of this course, students will be able to:

- use statistical software (JMP) to perform logistic regression
- select appropriate models depending on research questions

Evaluation

Students will be evaluated on two homework assignments, two computer lab worksheets, and a final open-book exam.

Students are expected to spend two to four hours of time on this 1-credit course each week.

Additional online modules related to this topic are available on the [Continuous Professional Development website](#).

For specific dates and times this course is provided, please see the [quarterly detailed course schedule](#).